

## **Detailed Procedure for setting up a current regulator card for the RHIC IR Power Supplies & the Snakes, Rotators, and Gamma-T Power Supplies**

1. Determine the sitewide name of the power supply the current regulator card is part of and write it down AND write down what service building this power supply is in.
2. Use the middle term of the sitewide name to determine what current regulator card you will need to set up. For example, if the sitewide name of the p.s. is "bi1-qf1-ps" then the middle term of the sitewide name is "qf1" so you will need to set up a current regulator card for a "qf1" power supply.
3. Now you should look for the time constant sheet which contains the middle term of the sitewide name you are interested in. For example, if you want to set up a current regulator card for a "qf1" power supply you should find the time constant sheet that has a "qf1" in its sheet name. It is ok if the sheet says "qf1/qd1", this means the time constant on the sheet is good for a qf1 or a qd1. The Time Constant sheets can be found in the 1004B spares locker or attached to this procedure.
4. Once you find the correct time constant sheet you must make sure the time constant sheet is for the building your power supply is in. If the sheet says "For ALL Service buildings" then that means the sheet is good for all service buildings. Some sheets may say "For service building 1010A only" which means the time constant on that sheet is good only for service building 1010A.
5. Once you have determined that you have the correct time constant sheet for the correct building you can set up the time constant board which is a little daughter board that plugs into the main current regulator board.
6. There are spare time constant daughter boards in the 1004B spares locker sitting in little drawers that are labeled. Find the one that you need and make sure it matches the time constant sheet. On the time constant sheet you will see the daughter board outlined in a rectangular shaped dotted line.
7. If the time constant sheet you have found matched the one on the sheet then the next step is to set up the jumpers on the time constant board correctly. The time constant sheet has jumper settings for the time constant board. Since you are most likely running with a magnet load you want to select the jumper settings called "inductive load jumper settings". Go ahead and set up the jumpers. The jumpers are also in the 1004B spares locker.

8. If for some reason you cannot find a time constant board that matches the one you need then you will then have to make one. If you need to make one you can find the blank time constant p.c. boards in the 1004B spares locker. You can use standard 1/4 watt resistors, they do not need to be precision resistors. You will need to use special 3.3uF capacitors for the time constant board which are also in the 1004B spares locker. These special capacitors are yellow on the front and back and silver on the sides with two silver colored leads soldered to the sides.

9. If you are making a time constant board you can use the time constant board schematic in the rectangular dotted line on the time constant sheet to tell you what components you need. Using the "qf1/qd1" time constant sheet as an example this is what you would do. R2 does not get a resistor, it is left empty. R3=2k. C1-C9 = 30uF means that a 3.3uF capacitor must be soldered into C1 and C2 and C3 and C4 and C5 and C6 and C7 and C8 and C9. All of these capacitors are in parallel for a total of 29.7uF or about 30uF. There are no capacitors soldered into C13-C24, these are left empty. R3=2k and R4=3.9K.

10. Now that the time constant board is set up you need to find a current regulator main board. These are also in the 1004B spares locker. They are all labeled. If you find a current regulator card with the sitewide name of the power supply you are working on you can use it. If you cannot find a current regulator card with the sitewide name of the p.s. you are working on then you will have to figure out which one you can use. Use TABLE I to determine which current regulator main boards cards are interchangeable.

**TABLE I Current Regulator Main Board Types:**

Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7
tq	qf1/qd1	qf6	qf7	qtrim	blue dh0 that is not in 1010A	qgt (these are gamma-t p.s.'s in alcoves)
qf2/qd2	qf3/qd3	qd6	qd7			
q89	qf8/qf9	q6	q7			
qd9	yellow dh0					
snk7 (in alcoves)	blue dhx					
rot3 (in alcoves)	blue dh0 in 1010A only					

11. There are 7 types of current regulator main boards. Type 1 is for the suncraft power supplies and the snake and rotator power supplies. The snake and rotators are in the alcoves. Types 2-6 are for the dynapower power supplies. Type 7 is for the Gamma-T power supplies in the alcoves. There should be one of each type of these current regulator main boards in the spares locker. When you find one that matches your type then you can interchange it with any other power supply that is the same type. For example, if you find a current regulator main board labeled "tq" then you can use that main board for a tq or a qf2 or qd2 or q89 or qd9 but you cannot use it for a qf6 or qd6 because a qf6 or qd6 is a different type.

12. Now that you have found a main board you should do some checks to make sure the main board is set up correctly.

13. For the current regulator main board you are interested in you should go to the time constant sheets and see if there are any main board changes. If you look towards the bottom middle of the time constant sheet look for the words “see main board changes”. If you see these words that means there are main board changes and they are usually have circles or ellipses around them. Check that your main board has these changes on it. If the time constant sheet does not say there are any main board changes then there are none. You can check that the board you have matches the components around op-amps U3 and U4 and U5 anyway by comparing the time constant sheet with the main board.

14. The next thing you must do is set up the jumpers correctly on the current regulator main board. If your main board is a Type 1 or a Type 7 then set up the jumpers on the main board so they look like the jumper settings in TABLE II:

**TABLE II      Type 1 or a Type 7 Current Regulator card main board jumper settings**

E5 to E6 in
E42 to E44 in
E45 to E48 in
E47 to E46 out

15. If your main board is a Type 2, 3, 4, 5 or 6 then set up the jumpers on the main board so they look like the jumper settings in TABLE III:

**TABLE III      Type 2, 3, 4, 5, or 6 Current Regulator card main board jumper settings**

E5 to E6 in
E42 to E44 in
E45 to E48 out
E47 to E46 out

16. Now that the jumpers have been set up correctly on the current regulator main board there is one more check which must be made. On the Type 2-6 current regulator main boards make sure there is a long jumper wire on the rear (or front) of the board from pin 26C of the 64 pin DIN connector to relay K3-1. You can find a schematic attached to the time constant sheets that shows the jumper wire and where it gets connected to. It is called “**jumper wire connection sheet for types 2-6 current regulator main boards**”. If the jumper wire is not on the rear (or front) of the board it must be installed. You can just solder the wire onto the two points on the rear (or front) of the board. Some new boards may have a land connecting these two points so you should ring these two points out with a meter. If it reads open then you need to install this jumper wire.

17. Only a type 1 or a Type 7 current regulator card will work with the wire installed or not installed on the rear (or front) of the board. This is because the jumper settings on the current regulator main board are different for the type 1 and type 7 vs type 2-6. Type 2-6 current regulator main board must have the jumper wire installed on the rear of the board or you will not be able to clear the error fault.

18. With the power supply in the OFF state you can now plug your time constant board into your current regulator main board and plug the complete current regulator card into the power supply. **MAKE SURE ALL OF THE PINS OF THE TIME CONSTANT BOARD PLUG INTO THE CURRENT REGULATOR MAIN BOARD OR YOU CAN DAMAGE THE POWER SUPPLY!!!**

19. After you plug the current regulator card into the power supply you put the power supply into STANDBY and you now need to set the error adjust to 1.25V and the error delay to 3.7V. You can do this by measuring error adjust testpoint on the front panel and the error delay testpoint on the front panel and use the common testpoint as your common for both the error adjust testpoint and the error delay testpoint. There are two pots at the top labeled error adjust and error delay adjust. These are the pots you will adjust. When you are done make sure the power supply is in REMOTE STANDBY and hand it back over to MCR.

### Current Regulator Card Setup Quick Checklist

Refer to the detailed procedure if you need more information. The Detailed Procedure can be found in the 1004B spares locker in a grey folder. It is called “Detailed Procedure for setting up a current regulator card for the RHIC IR Power Supplies & the Snakes, Rotators, and Gamma-T Power Supplies”

1. What is sitewide name of p.s. and building p.s. is in? Write down here: \_\_\_\_\_
2. Find the Time Constant sheet that contains the middle term of p.s. sitewide name in the 1004B spares locker in a grey folder.
3. Find the Time Constant daughter board in 1004B spares locker in the little drawers.
4. Make sure the jumpers on the Time Constant daughter board match the time constant sheet jumper settings for INDUCTIVE LOAD since you are connected to the magnets.
5. Find the current regulator main board that you need. There are 7 types of current regulator main boards. TABLE I below shows which current regulator main boards can be interchanged.

**TABLE I Current Regulator Main Board Types:**

Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7
tq	qf1/qd1	qf6	qf7	qtrim	blue dh0 that is not in 1010A	qgt (these are gamma-t p.s.'s in alcoves)
qf2/qd2	qf3/qd3	qd6	qd7			
q89	qf8/qf9	q6	q7			
qd9	yellow dh0					
snk7 (in alcoves)	blue dhx					
rot3 (in alcoves)	blue dh0 in 1010A only					

6. Determine what type of current regulator main board you have by looking at TABLE I above and finding the middle term of the sitewide name you are interested in. After you know which type of current regulator main board you have then look for any current regulator main board in the 1004B spares locker that is the same as your type. All the current regulator main boards have the middle term of a sitewide name on them.

7. If you find you need a type 2-6 current regulator main board then make sure the spare board you find has a jumper wire on the rear of the board from K3-1 to the 64 pin DIN connector 26C. You should also ring out these two points to make sure there is a land connecting them. If these two points are not connected then refer to the detailed procedure for connecting them.

8. Set up the jumpers correctly on the current regulator main boards. Set up the jumper settings on the main boards according to one of the following two tables, TABLE II OR TABLE III:

**TABLE II      Type 1 or a Type 7 Current Regulator card main board jumper settings**

E5 to E6 in
E42 to E44 in
E45 to E48 in
E47 to E46 out

**TABLE III      Type 2, 3, 4, 5, or 6 Current Regulator card main board jumper settings**

E5 to E6 in
E42 to E44 in
E45 to E48 out
E47 to E46 out

9. You can now plug your time constant board into your current regulator main board and plug the complete current regulator card into the power supply. **MAKE SURE ALL OF THE PINS OF THE TIME CONSTANT BOARD PLUG INTO THE CURRENT REGULATOR MAIN BOARD OR YOU CAN DAMAGE THE POWER SUPPLY!!!**

10. After you plug the current regulator card into the power supply you put the power supply into STANDBY and you now need to set the error adjust to 1.25V and the error delay to 3.7V. You can do this by measuring error adjust testpoint on the front panel and the error delay testpoint on the front panel and use the common testpoint as your common for both the error adjust testpoint and the error delay testpoint. There are two pots at the top labeled error adjust and error delay adjust. These are the pots you will adjust. When you are done make sure the power supply is in REMOTE STANDBY and hand it back over to MCR.

Magnet Power Supplies	Resistive Load	Inductive Load
Qd3/Qf3	2 pin jumper from E2-E3 2 pin jumper from E9-E10 2 pin jumper from E6-E7	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7
Blue dhx	2 pin jumper from E2-E3 2 pin jumper from E9-E10 2 pin jumper from E6-E7  <b>Try This-Not Tested yet</b>	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7
Blue dh0 (except 1010A)	2 pin jumper from E2-E3 2 pin jumper from E9-E10 2 pin jumper from E6-E7  <b>Try This-Not Tested yet</b>	2 pin jumper from E1-E2 2 pin jumper from E6-E7
Blue dh0 (1010A only)	2 pin jumper from E2-E3 2 pin jumper from E9-E10 2 pin jumper from E6-E7  <b>Try This-Not Tested yet</b>	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7
Yellow dh0	2 pin jumper from E2-E3 2 pin jumper from E9-E10 2 pin jumper from E6-E7  <b>Try This-Not Tested yet</b>	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7
Qf6/Qd6/Q6	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7
Qtrims (only exist in 1004B)	2 pin jumper from E2-E3 2 pin jumper from E9-E10 2 pin jumper from E6-E7  <b>Try This-Not Tested yet</b>	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7
Qf1,Qd1	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7
Qf8,Qf9	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7
Qf7Qd7/Q7	2 pin jumper from E7-E8 2 pin jumper from E1-E2	2 pin jumper from E1-E2 2 pin jumper from E6-E7
TQ's	2 pin jumper from E2-E3	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7
Qd2/qf2	2 pin jumper from E1-E2 2 pin jumper from E7-E8	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7
Q89/qd9	2 pin jumper from E1-E2 2 pin jumper from E7-E8  <i>not Tested on q89's in 2B, 4B, 6B, 8B, 12A</i>	2 pin jumper from E1-E2 2 pin jumper from E9-E10 2 pin jumper from E6-E7

Filename = TimeConstants3.doc

12/05/01 – This sheet was made up after the modifications to the dhx, dh0 and qtrim time constants.

## TIME CONSTANT SHEET

BLUE and YELLOW qf1/qd1 power supplies

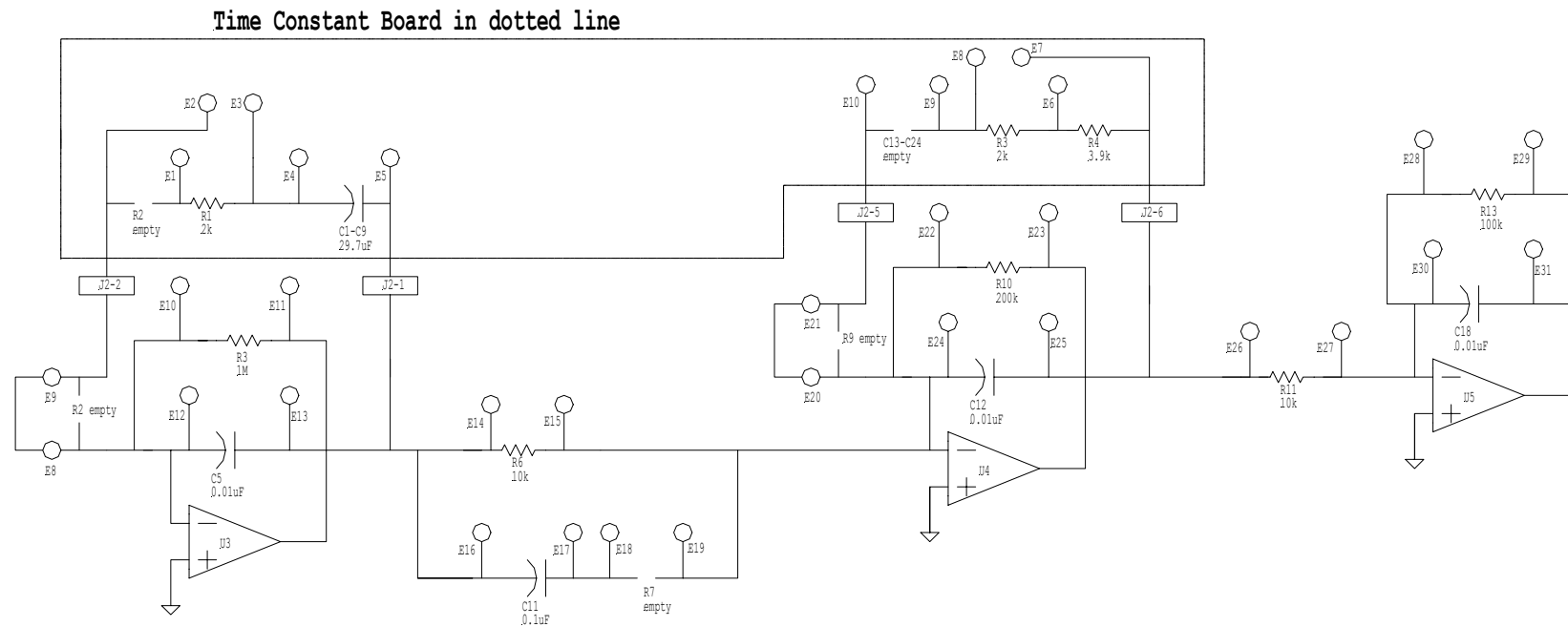
For ALL Service buildings

### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.





## TIME CONSTANT SHEET

BLUE and YELLOW qf2/qd2 power supplies

For ALL Service buildings

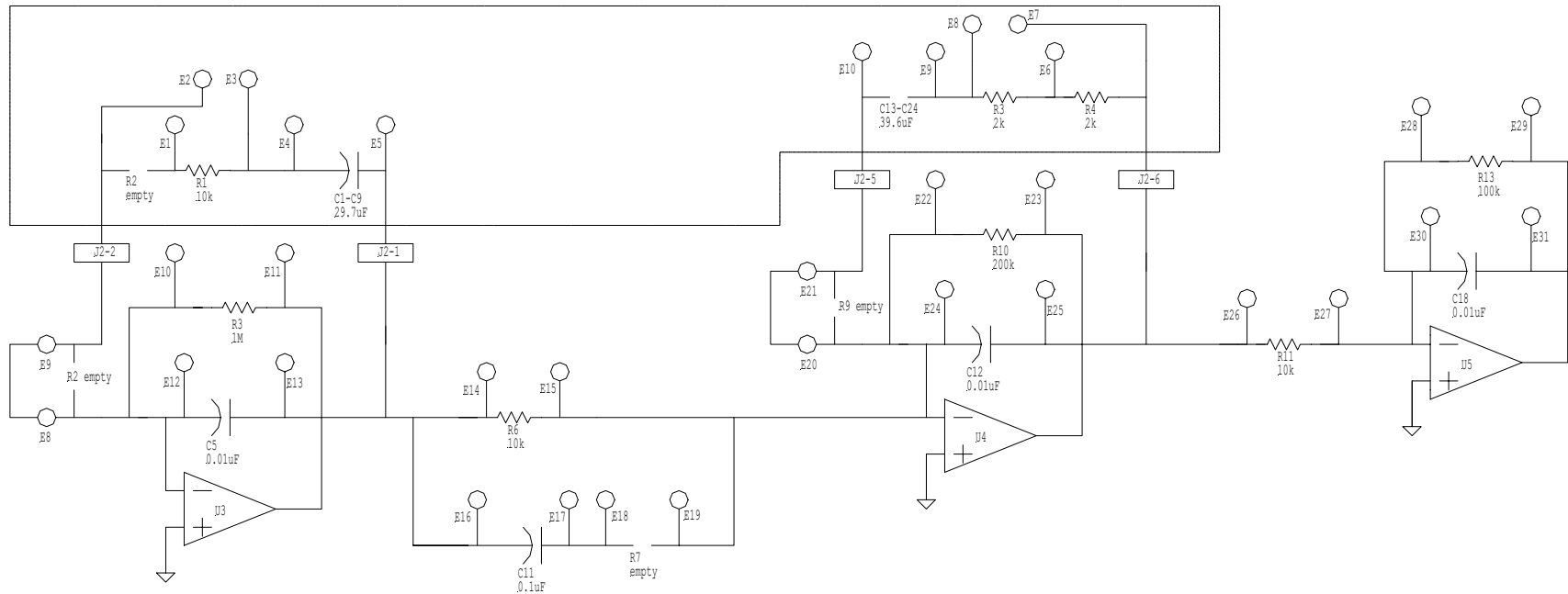
### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E1-E2 in, and E7-E8 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.

Time Constant Board in dotted line



## TIME CONSTANT SHEET

BLUE and YELLOW qf3/qd3 power supplies

For ALL Service buildings

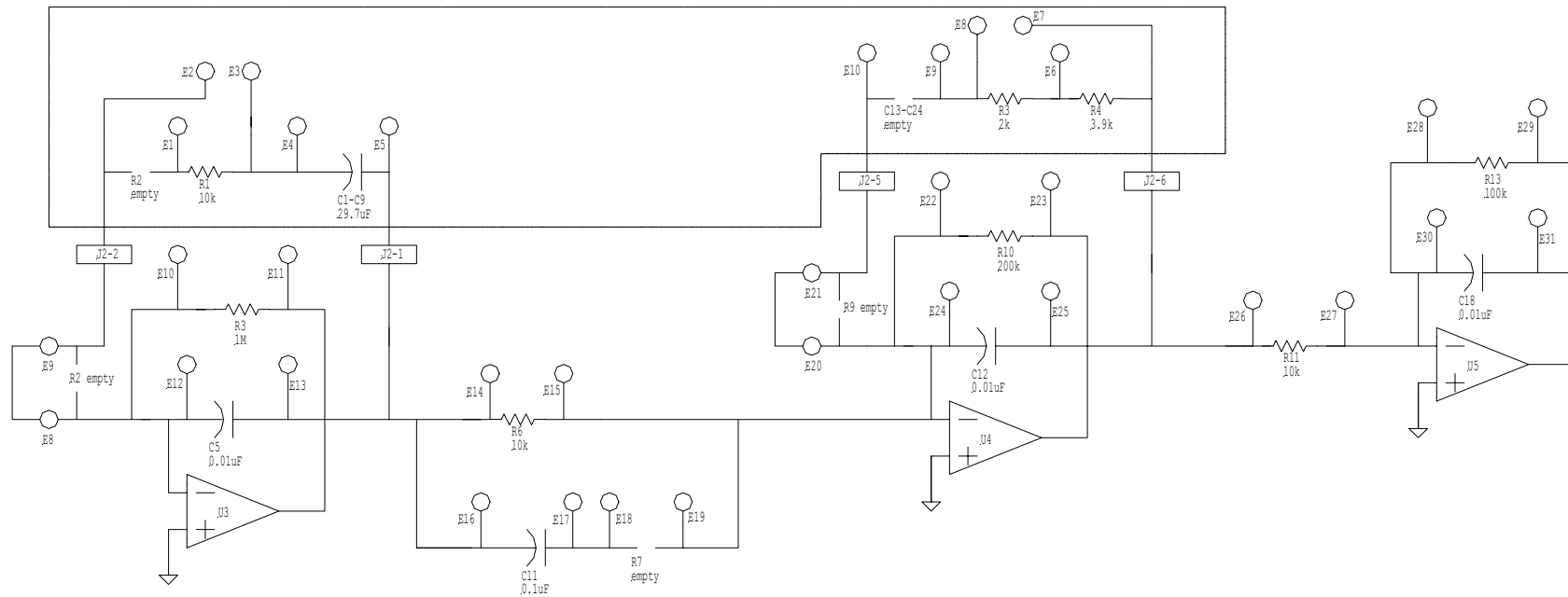
### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E6-E7 in, E9-E10 in, and E2-E3 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.

Time Constant Board in dotted line



## TIME CONSTANT SHEET

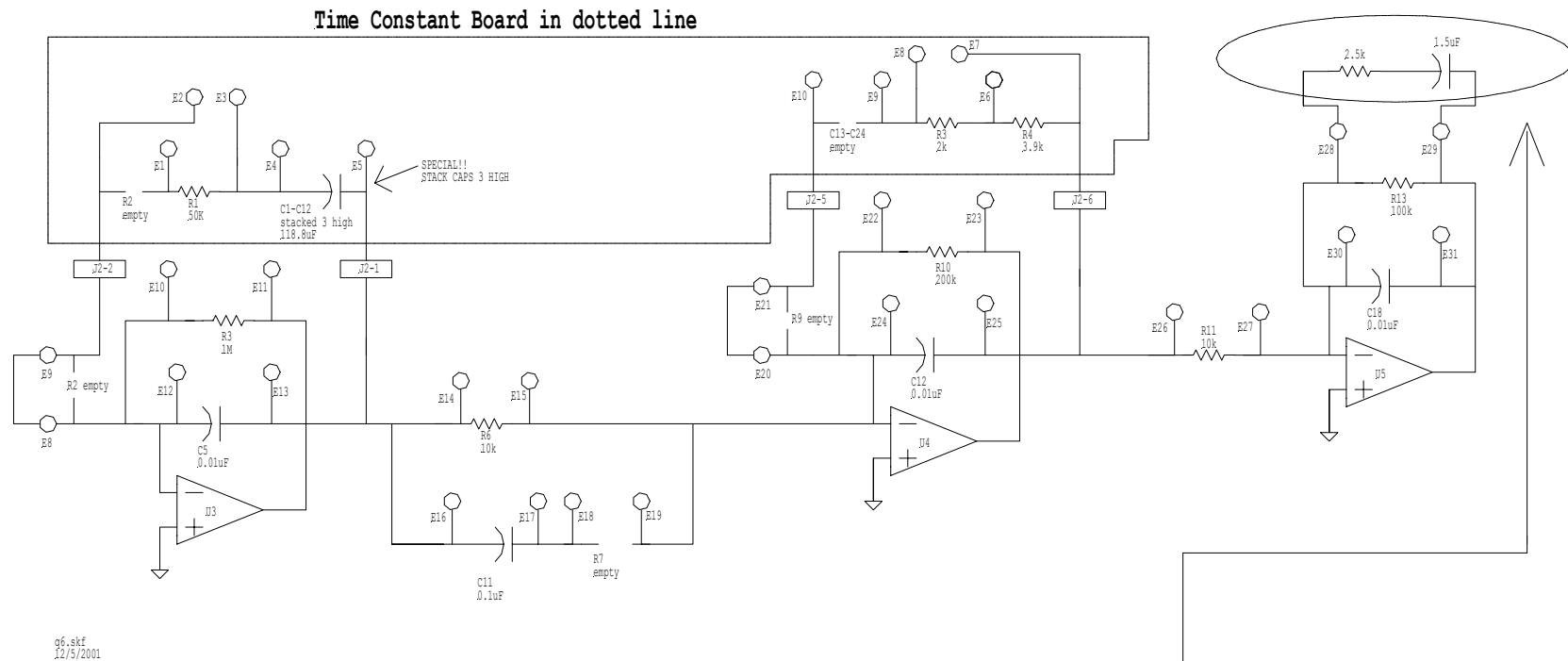
BLUE and YELLOW qf6/qd6/q6 power supplies

All the Service Buildings are the same

Time Constant Board Jumper Settings  
(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.



q6.skf  
12/5/2001

SEE MAIN BOARD CHANGES IN ELLIPSE!!!

## TIME CONSTANT SHEET

BLUE and YELLOW qf7/qd7/q7 power supplies

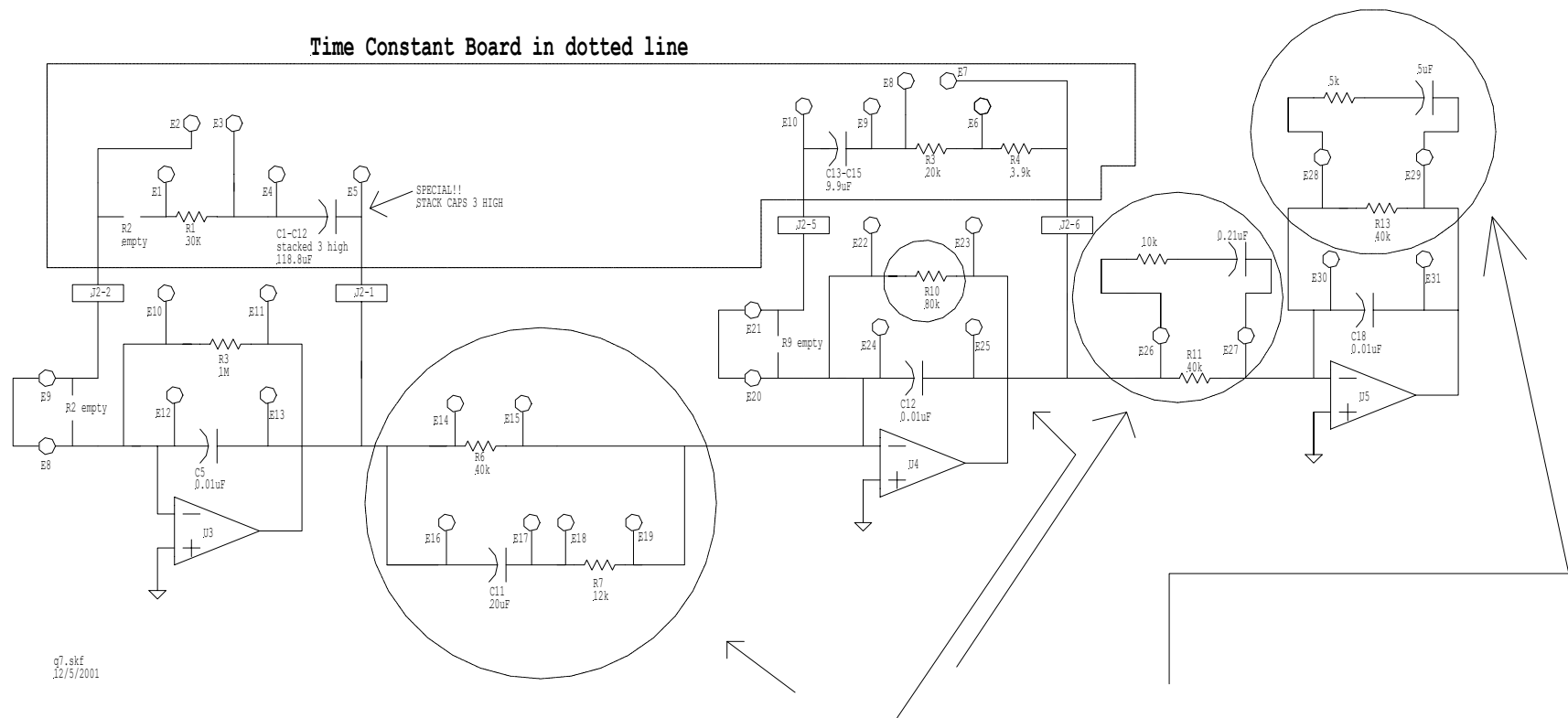
ALL SERVICE BUILDINGS ARE THE SAME

### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E1-E2 in, and E7-E8 in.

Inductive Load Jumper settings = E1-E2 in, and E6-E7 in.



q7.skf  
12/5/2001

## TIME CONSTANT SHEET

BLUE and YELLOW qf8/qf9 power supplies

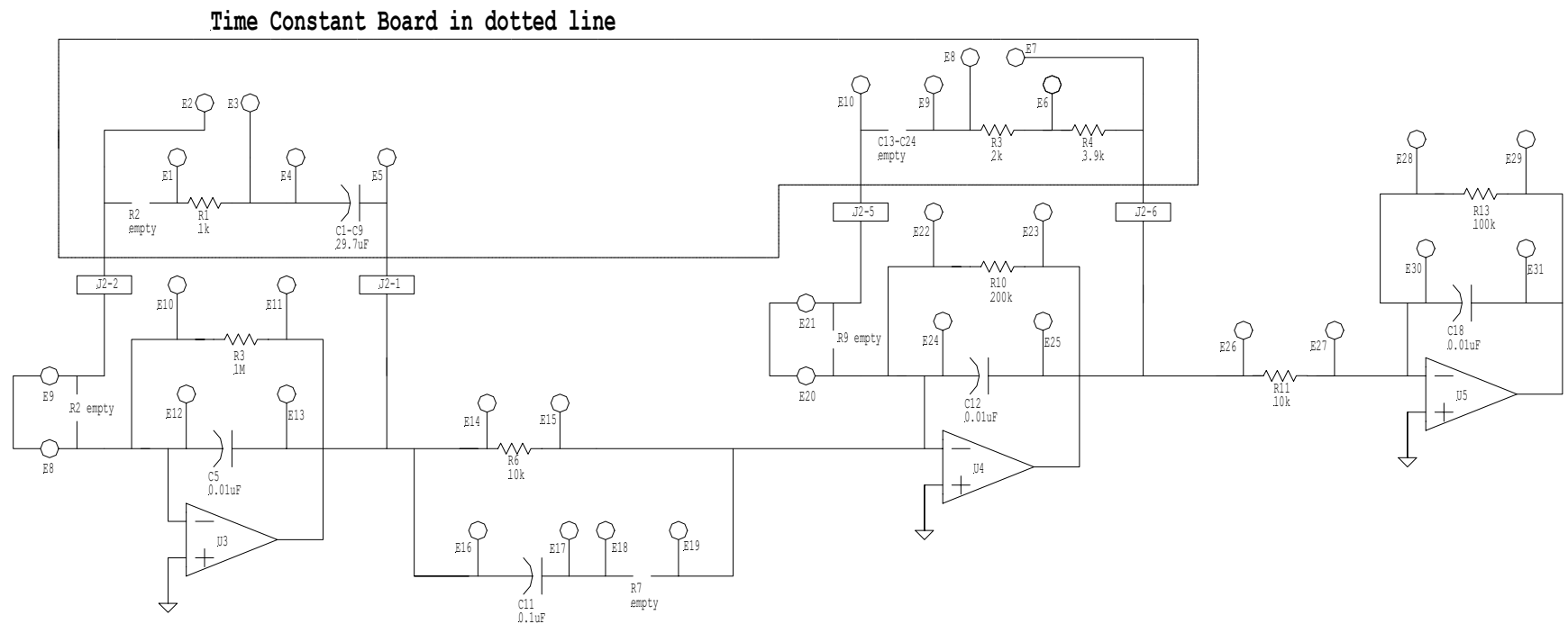
For ALL Service buildings

### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.



## TIME CONSTANT SHEET

BLUE and YELLOW q89 power supplies

ONLY for service buildings:  
1002B, 1004B, 1006B, 1008B and 1012A

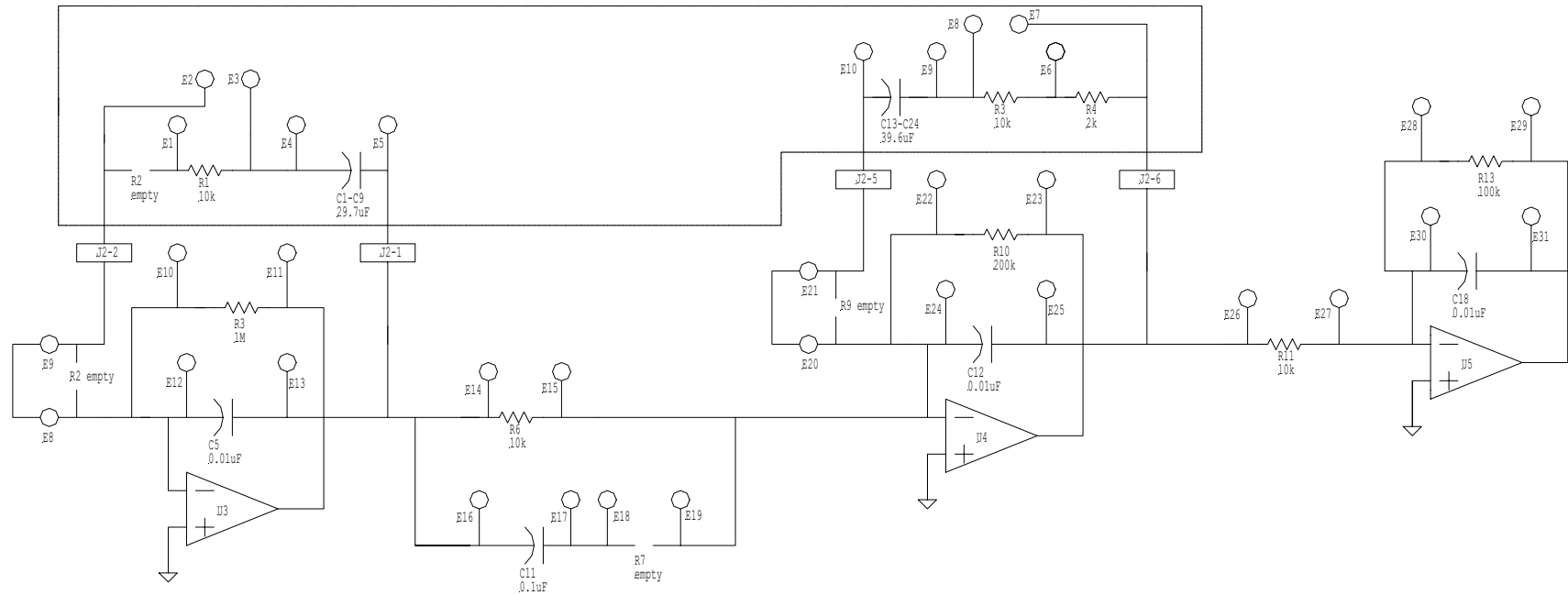
### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E1-E2 in, and E7-E8 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.

Time Constant Board in dotted line



## TIME CONSTANT SHEET

BLUE and YELLOW qd9 and qd9 power supplies

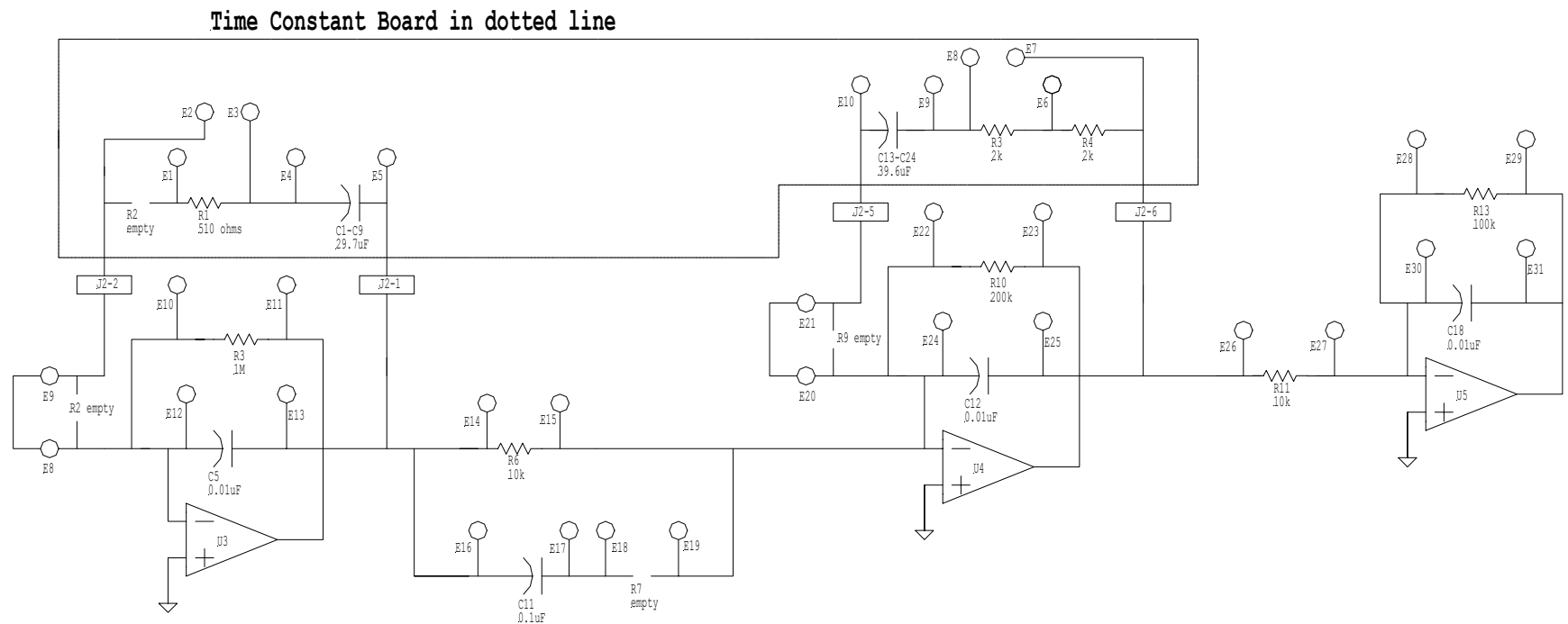
ONLY for service building 1010A

### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E1-E2 in, and E7-E8 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.



## TIME CONSTANT SHEET

### BLUE and YELLOW QTRIM power supplies

The QTRIM's are located only in 1004B.

They are Dynapower p.s.'s.

They are 40V at 300A.

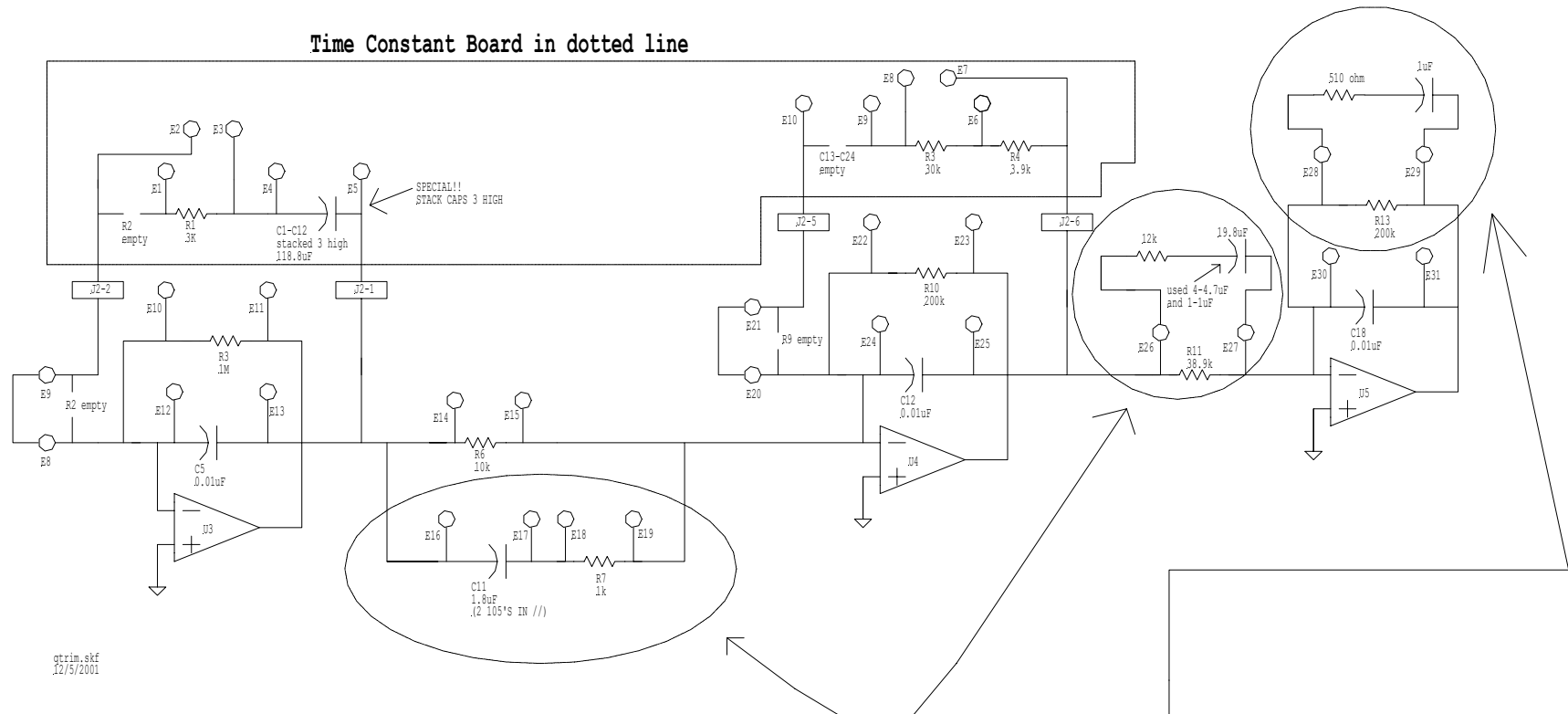
They are in a cabinet that looks like a Dynapower 600A p.s.

### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E6-E7 in, E9-E10 in and E2-E3 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.



qtrim.skf  
12/5/2001



## TIME CONSTANT SHEET

BLUE and YELLOW tq power supplies

For ALL Service buildings

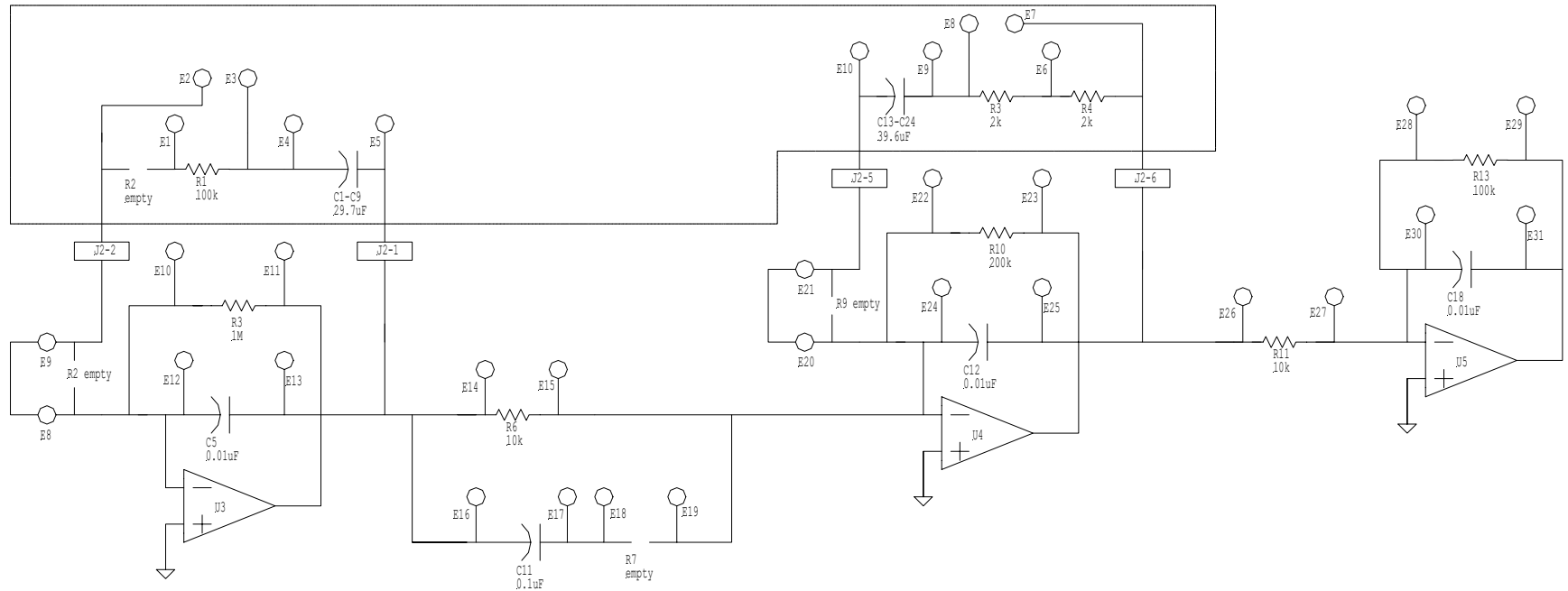
### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E2-E3 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.

Time Constant Board in dotted line



## TIME CONSTANT SHEET

YELLOW dh0 power supplies

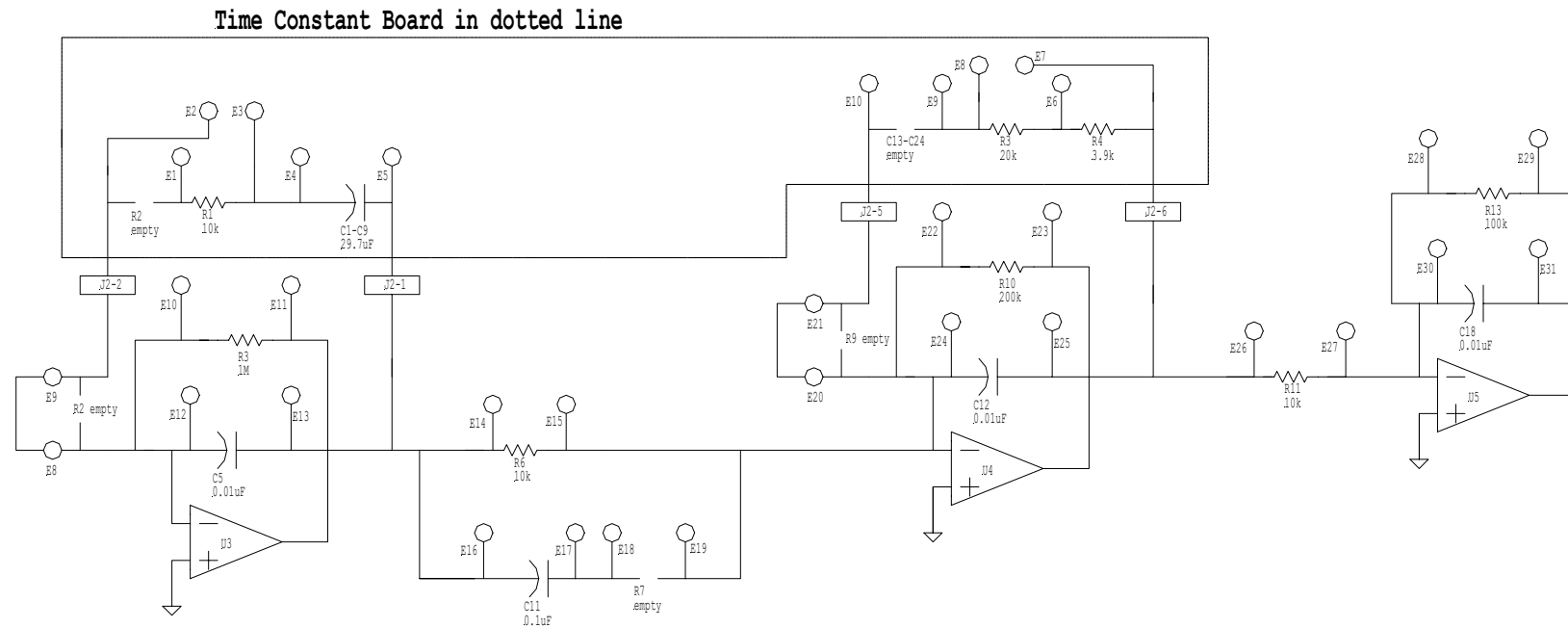
For Service buildings 1002B, 1004B, 1006B, 1008B and 1012A

## Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E6-E7 in, and E9-E10 in and E2-E3 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.



## TIME CONSTANT SHEET

YELLOW dh0 power supplies

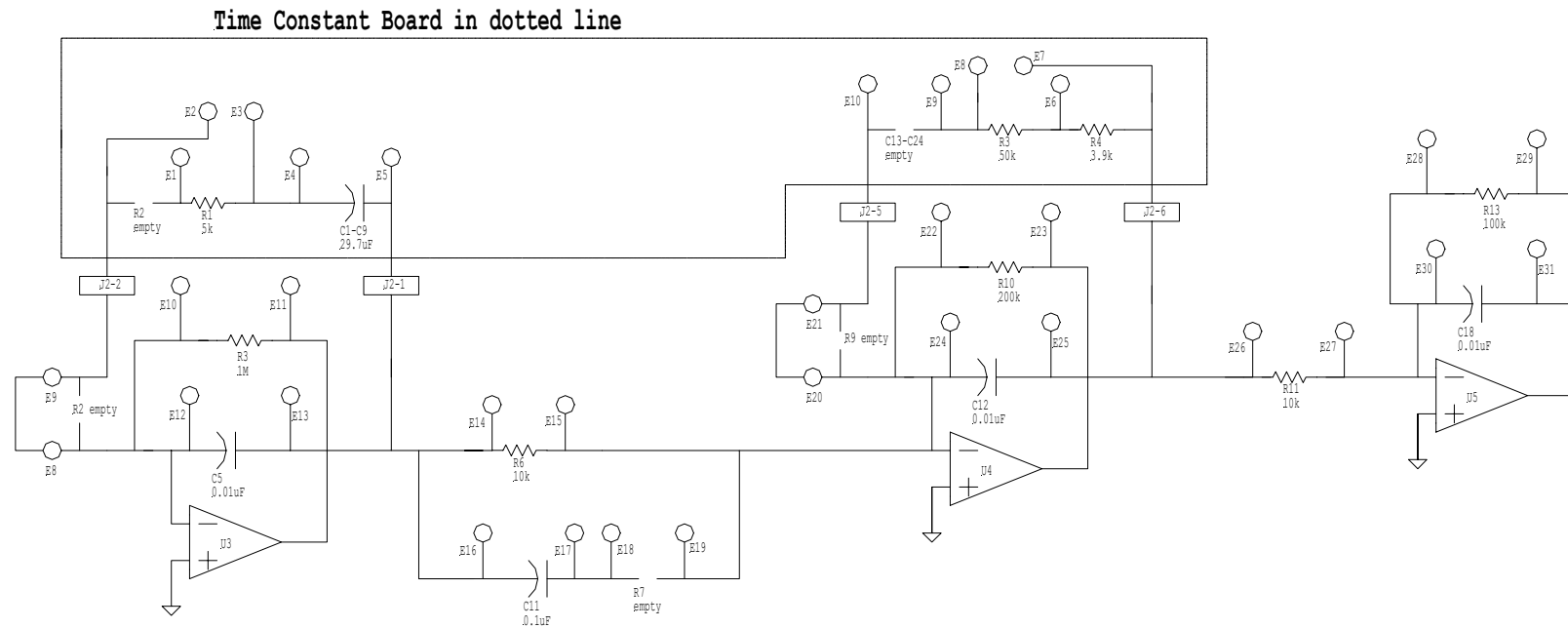
For Service Building 1010A ONLY

### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E6-E7 in, and E9-E10 in and E2-E3 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.



## TIME CONSTANT SHEET

BLUE dhx power supplies

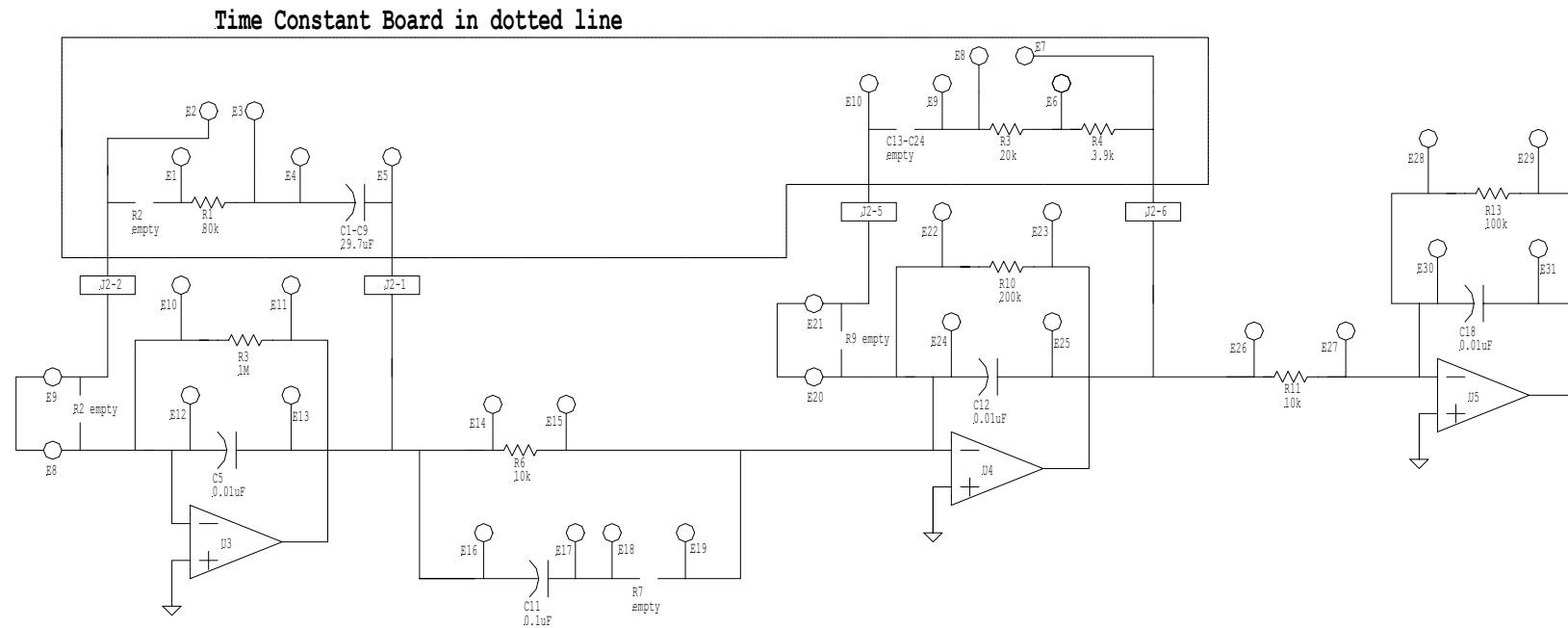
For Service buildings 1002B, 1004B, 1006B, 1008B and 1012A

## Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E6-E7 in, and E9-E10 in and E2-E3 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.



## TIME CONSTANT SHEET

BLUE dhx and BLUE dh0 power supplies

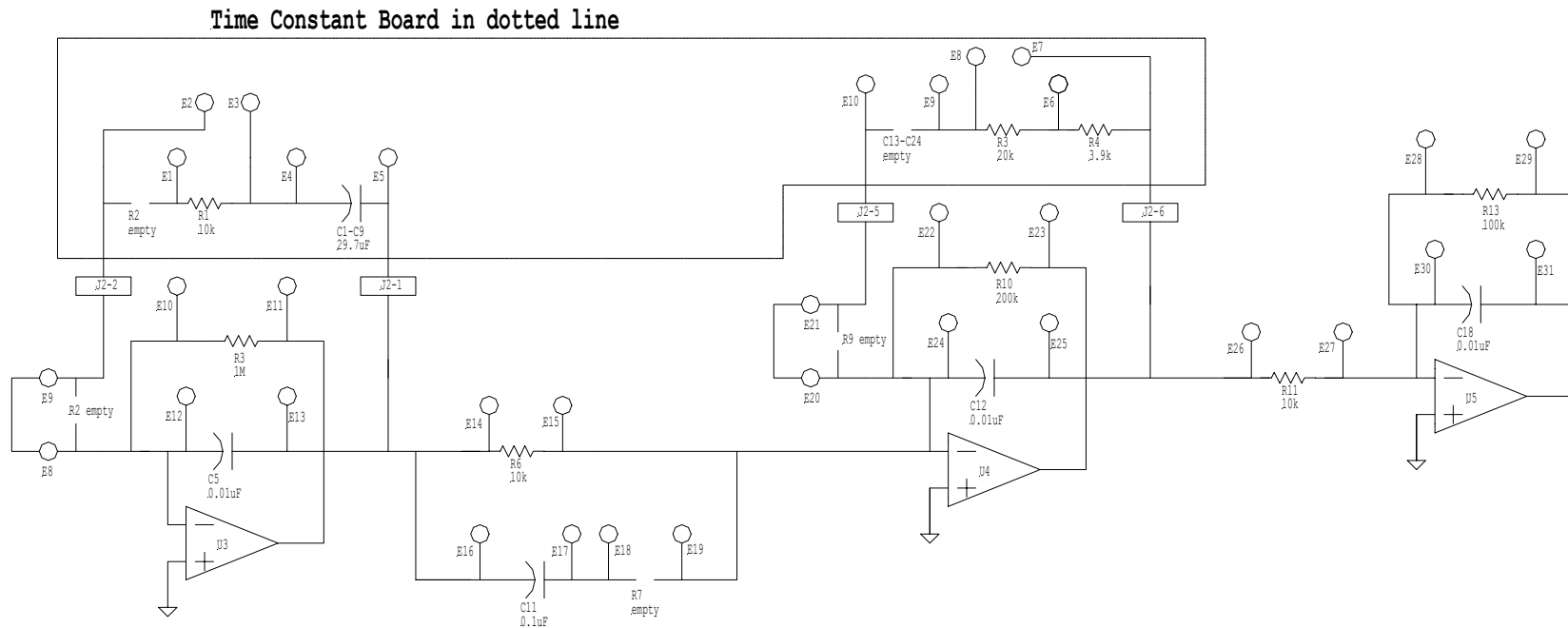
For Service building 1010A ONLY

### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings = E6-E7 in, and E9-E10 in and E2-E3 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in, and E9-E10 in.



## TIME CONSTANT SHEET

BLUE dh0 power supplies

For Service buildings 1002B, 1004B, 1006B, 1008B and 1012A

### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load Jumper settings =

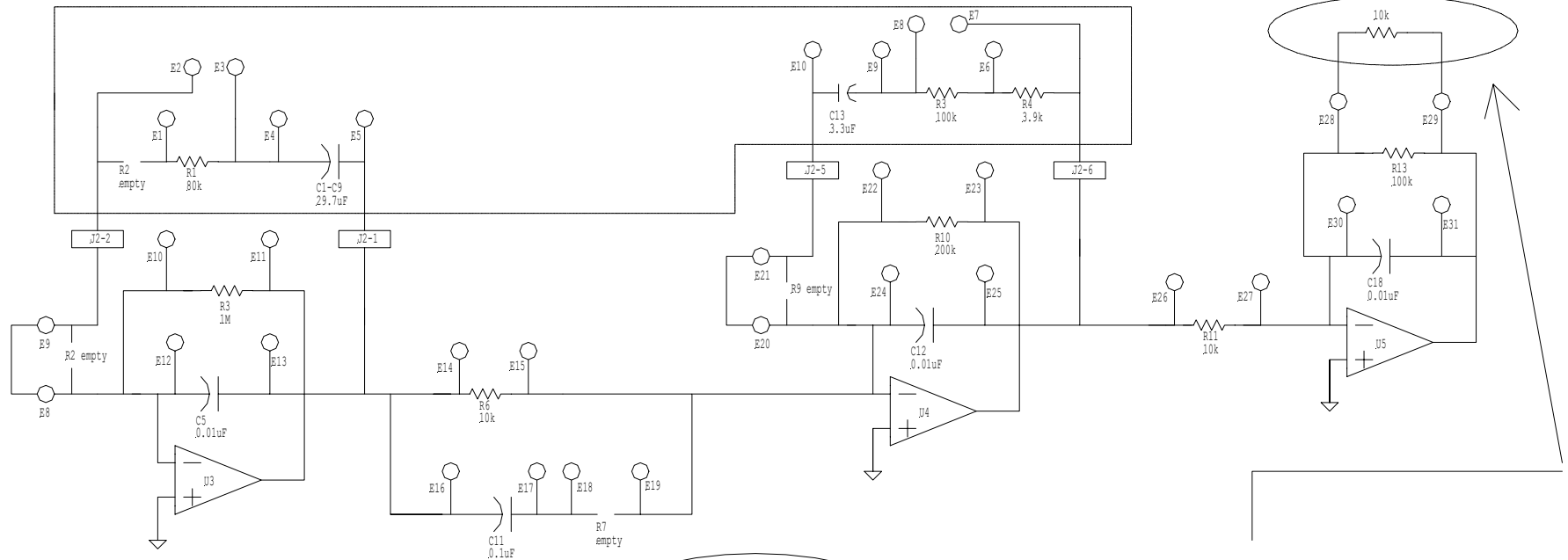
E6-E7 in, E9-E10 in, and E2-E3 in.

AND IF ABOVE DOESN'T WORK TRY THIS FOR RESISTIVE LOAD:

E6-E8 in (not E7), and E2-E3 in.

Inductive Load Jumper settings = E1-E2 in, E6-E7 in.

Time Constant Board in dotted line



bdh0except10A.skf  
1/9/2002

C30 = 15uF  
use three 4.7uF monolithic  
capacitors in parallel

SEE MAIN BOARD CHANGES IN ELLIPSE!!!

## TIME CONSTANT SHEET

BLUE and YELLOW qgt power supplies

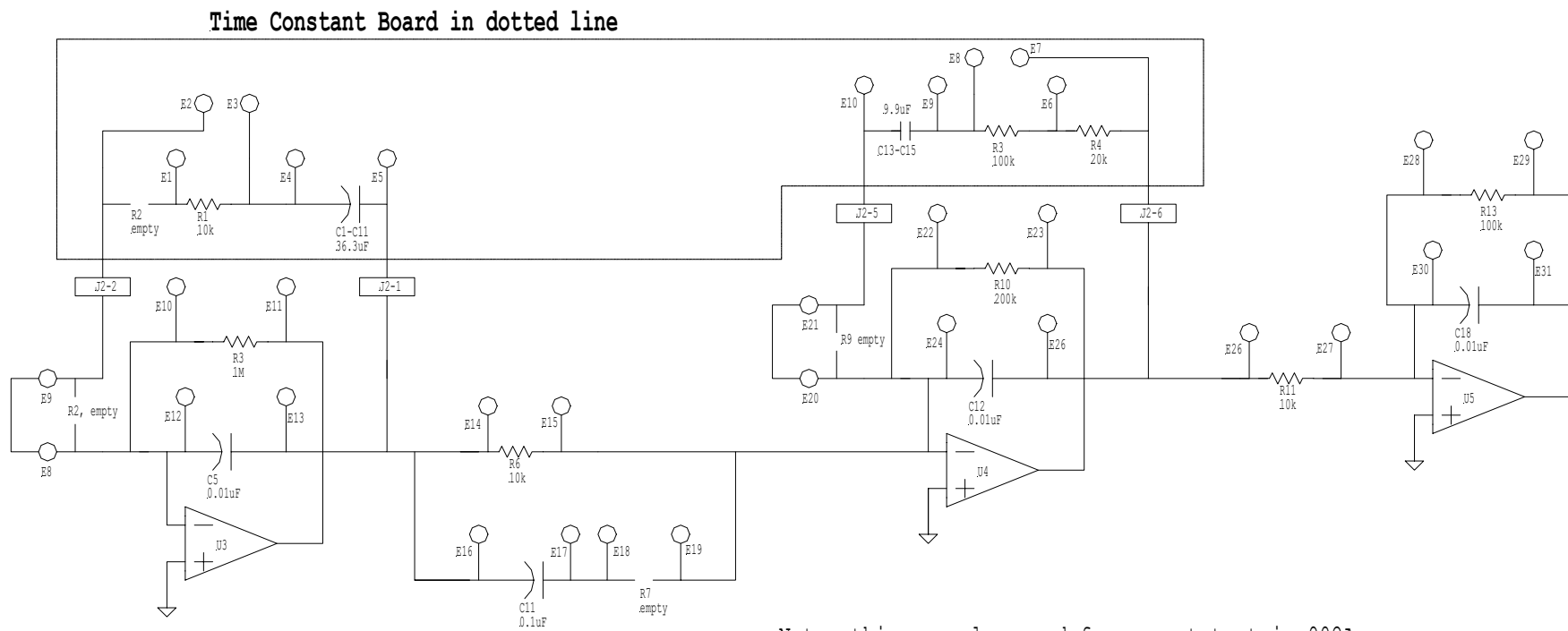
For Gamma-T's in ALL Alcoves

### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Real Magnet Inductive Load Jumper settings = E1-E2 in, E6-E7 in

Resistive Load Jumper settings = see separate sheets



Note: this was also used for magnet test in 902A

## TIME CONSTANT SHEET

BLUE and YELLOW snk and rot power supplies

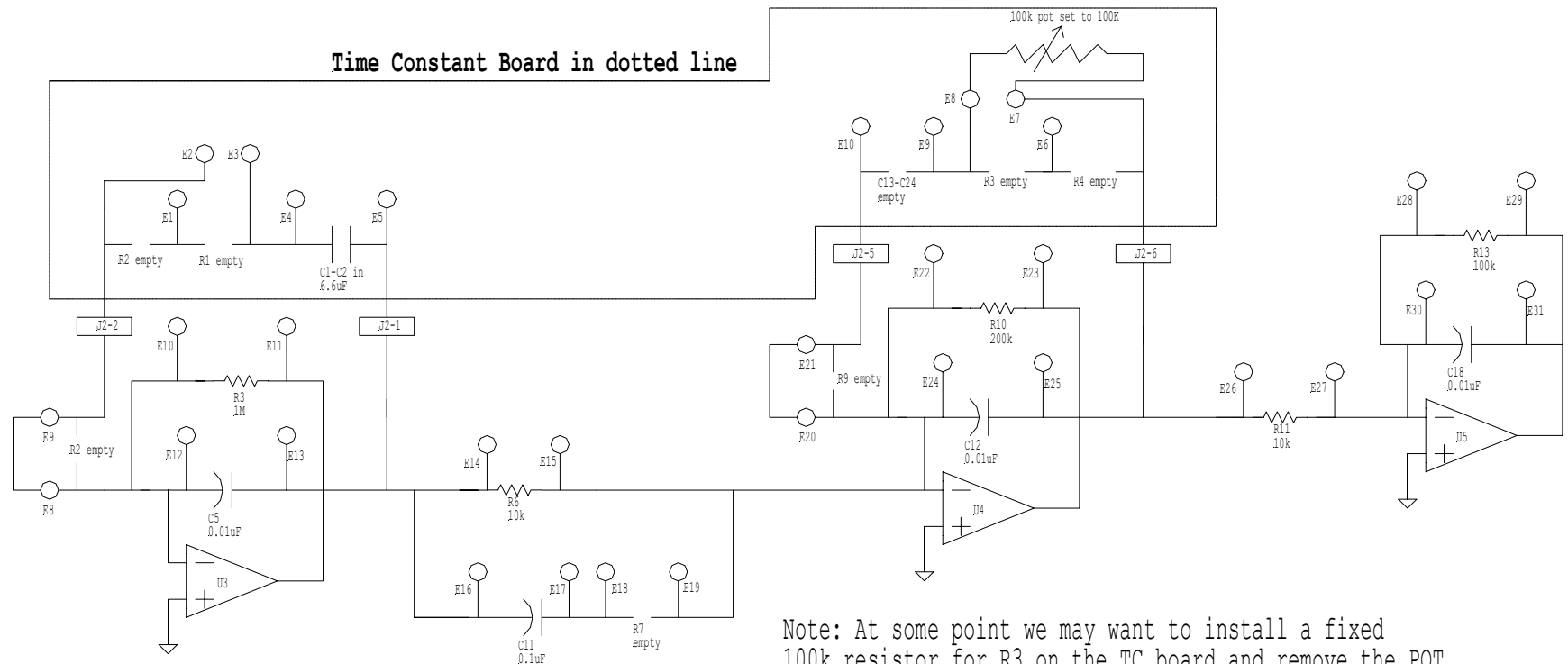
For Snakes and Rotators in ALL Alcoves

Magnet Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Inductive Load Jumper settings = E2-E3 in and E9-E10 in

Resistive Load Jumper settings = see separate time constant sheet.



Note: At some point we may want to install a fixed 100k resistor for R3 on the TC board and remove the POT and then install another jumper from E6-E7



# Other Special Resistive and Inductive Load Time Constants for Snakes, Spin Rotators, and Gamma-T Power Supplies

This was used for the shorted 250mcm load in 820A  
and also for the shorted 535mcm load in the tunnel.

## TIME CONSTANT SHEET

BLUE and YELLOW snk and rot power supplies

For Snakes and Rotators in ALL Alcoves

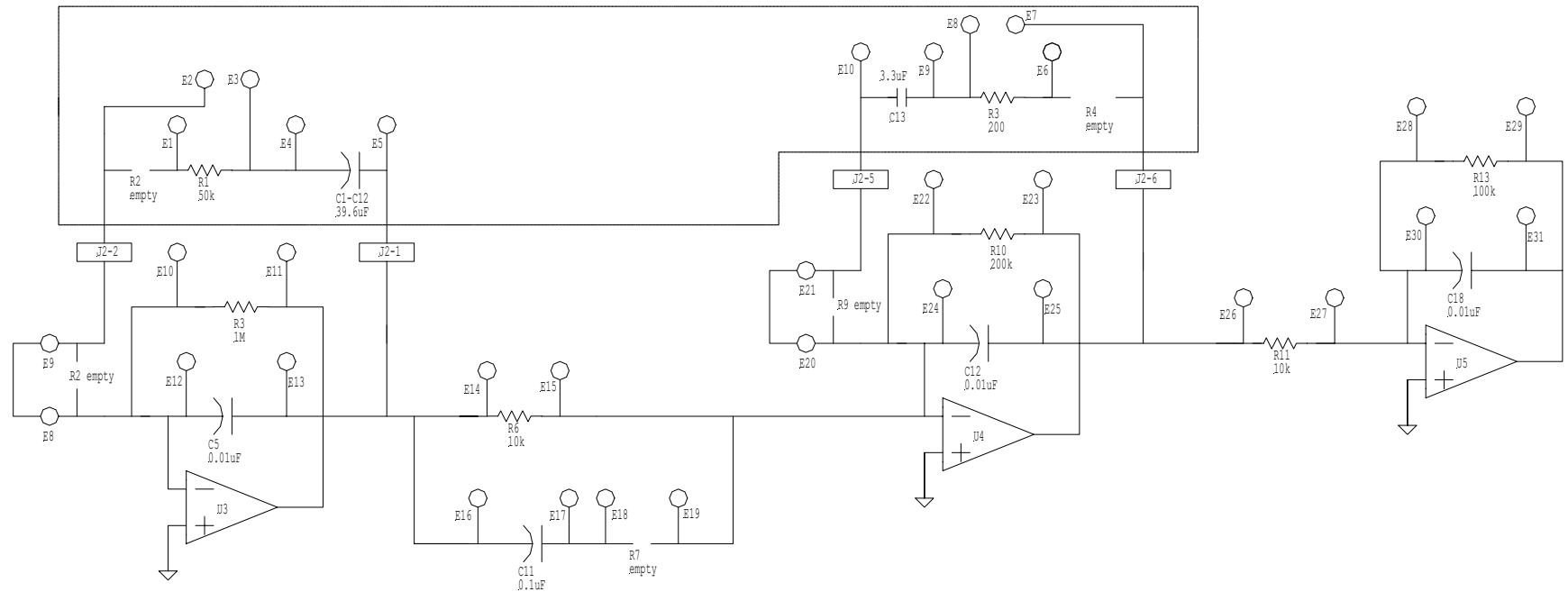
### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

Resistive Load (250mcm or 535mcm) Jumper settings =  
E2-E3 in, and E6-E7 in and E9-E10 in.

Inductive Load Jumper settings = see separate sheet

### Time Constant Board in dotted line



## TIME CONSTANT SHEET

qgt power supplies

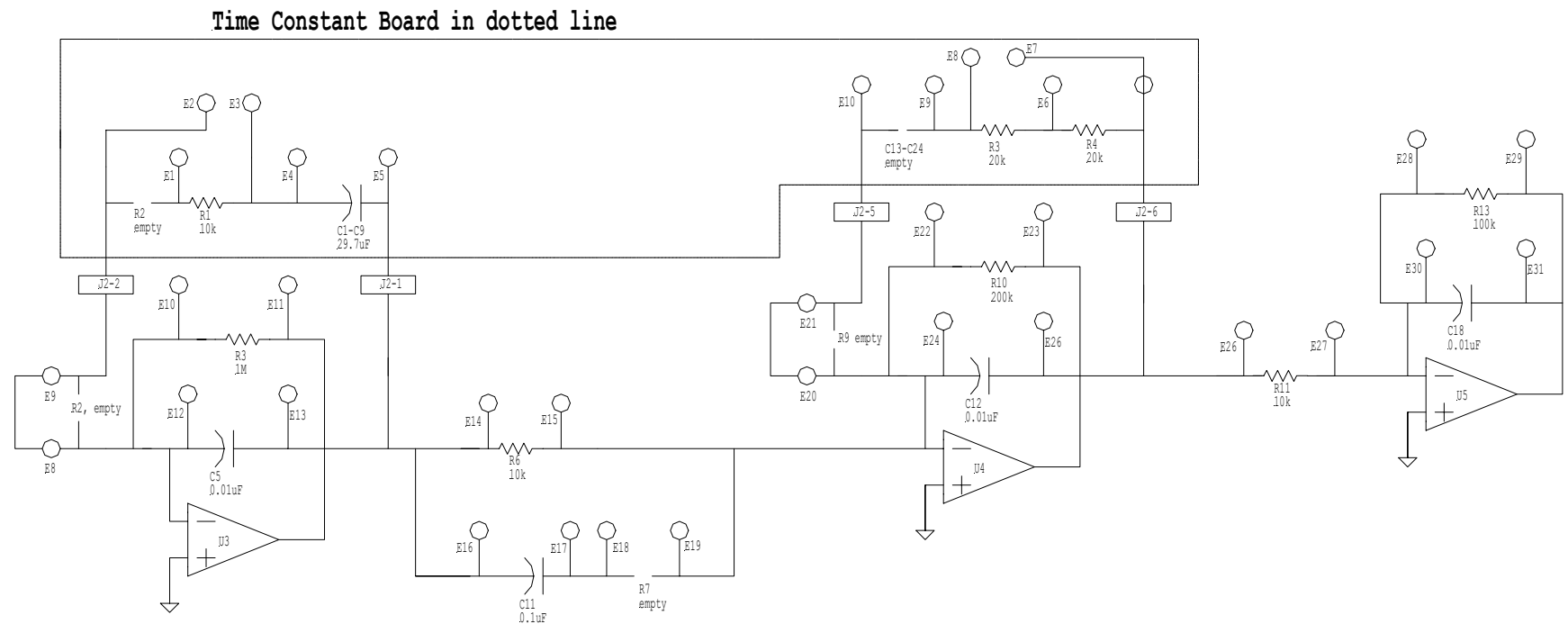
For 58mH test load only

### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

58mH Load Jumper settings = E1-E2 in, E6-E7 in, E9-E10 in

See other qgt TC sheets for Real Magnet Time Constant



## TIME CONSTANT SHEET

qgt power supplies

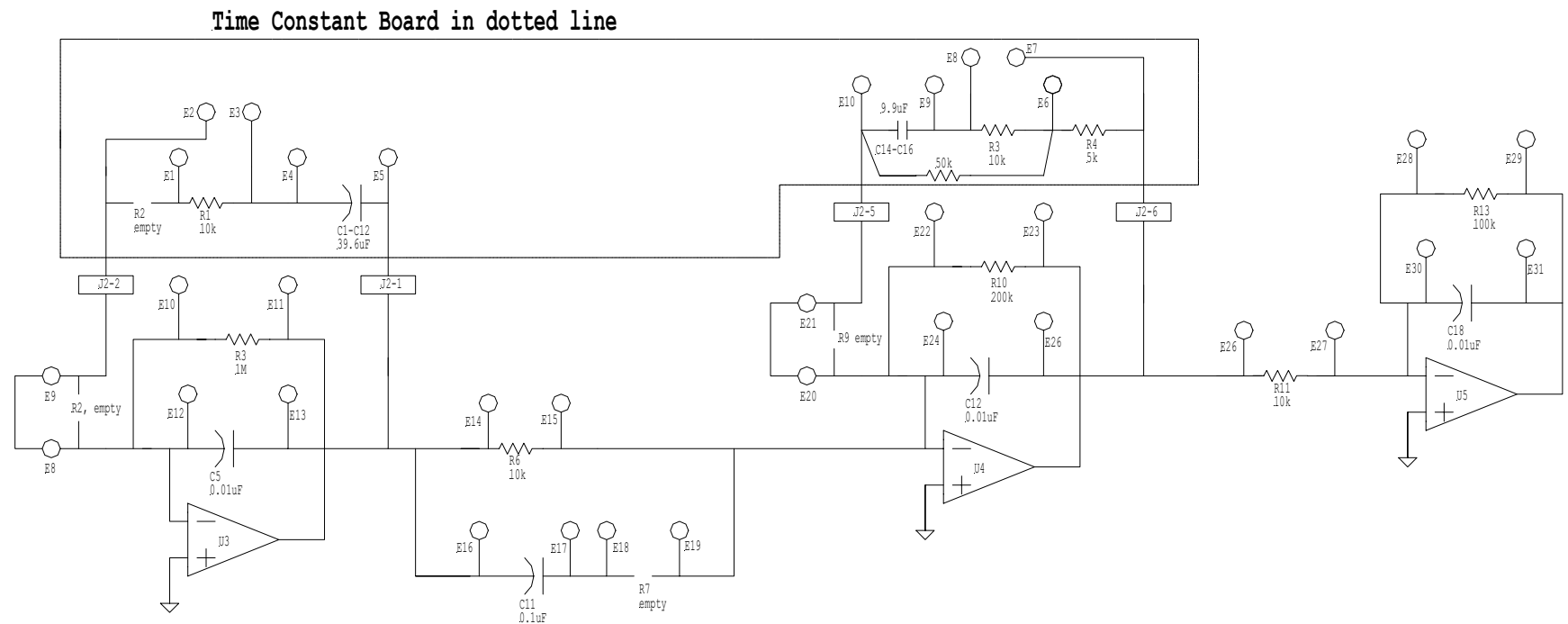
For different test loads

### Time Constant Board Jumper Settings

(Little daughter board on top of Current Regulator Card)

45mH, 35mH or 10 ohm Load Jumper settings = E1-E2 in, E6-E7 in

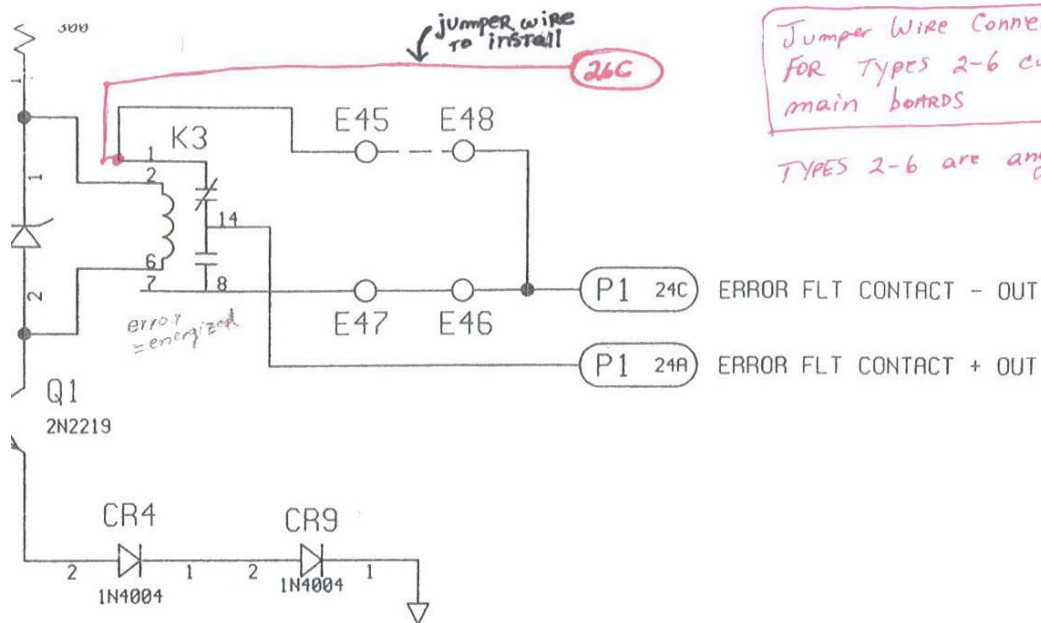
See other qgt TC sheets for Real Magnet Time Constant



# Current Regulator Card Jumper Wire Modification Drawing (for all p.s.'s) and 3u Chassis Backplane Jumper Modification Drawing (for Dynapower p.s.'s only)

Note: The backplane modification drawing is provided for troubleshooting purposes only. This modification should be completed already. If however you find you cannot clear an error fault then one possible problem could be that the jumper wires on the backplane came off and this drawing will help you replace them. These jumpers should be installed ONLY if it is a Dynapower P.S.!!!

You should also be aware there are some new backplanes with 2 pin jumpers on the front labeled “Install for Dynapower p.s.’s Only”. Just pull out all of the cards in the 3u chassis and look for these 2 pin jumpers (there are 2 – 2 pin jumpers next to each other). If you find them then the jumpers should be installed “For Dynapower p.s.’s only” on the front. If these jumpers do indeed exist on the front of the 3u chassis backplane then no jumpers have to be installed on the rear of the backplane.



Jumper Wire Connection Sheet  
FOR Types 2-6 current Regulator  
main boards

Types 2-6 are any Dynapower P.S.  
ONLY

24069009		NO. PER ASS'Y	
USED ON DRAWING NUMBER		NO. PER ASS'Y	
BROOKHAVEN NATIONAL LABORATORY ASSOCIATED UNIVERSITIES, INC. UPTON, N.Y. 11973			
TITLE: INSERTION QUADRUPOLE PWR. SUP. SYSTEM CURRENT REGULATOR CARD SCHEMATIC DIAGRAM			
SIZE E	DRAWING NUMBER: 24069007	REV. A	
SCALE: NONE		WEIGHT:	
SHEET 1 OF 1			

APPROPRIATE IN GENERAL CONFORMANCE WITH IEEE Y14.24M-1989		<div style="border: 1px solid black; border-radius: 50%; padding: 10px; text-align: center;">             RHIC           </div>	
OTHERWISE SPECIFIED	DRAWN BY C. GUARINO	5-15-98	
DIMENSIONS ARE IN INCHES DIMENSIONAL TOLERANCES .X .06 .XX .02 .XXX .005 ANGULAR TOLERANCE $\pm 1^\circ$	DESIGN APPROVAL		
	CHECKED BY		
	ENGINEER APPROVAL		
	SUPERVISOR APPROVAL		
	Q.A. APPROVAL		
BREAK SHARP EDGES			
MAX. MIN.			

REV. A  
SHEET 1 OF 1  
Dwg NO 24069007

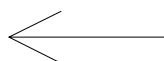
A

IregJumperWire2.jpg

## 3u Chassis Backplane Modification For Dynapower P.S.'s ONLY

64 pin Connector  
J4 pin 6C

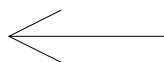
64 pin Connector  
J6 pin 24C



Jumper Wire to install on backplane OF DYNAPOWER P.S.'S only  
AND if no 2 pin jumpers exist on the front  
with the labeling "Install for Dynapower p.s.'s ONLY"

64 pin Connector  
J4 pin 1C

64 pin Connector  
J6 pin 26C



Jumper Wire to install on backplane OF DYNAPOWER P.S.'S only  
AND if no 2 pin jumpers exist on the front  
with the labeling "Install for Dynapower p.s.'s ONLY"

3uBackplaneModDynOnly1.skf









